the future of drive technology

Delta's C2000 range comprises the most cost-effective FOC (field-oriented control) AC motor drives with built-in PLC function. The series offers high efficiency and performance with low maintenance costs.
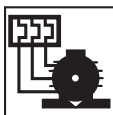
- enhanced motor efficiency and improved load impact
- safe stop function
- innovative PID technology
- wide range of models to fit different industries and applications
- built-in high-speed communication CANopen protocols and MODBUS
- enhanced protection and adaptation to ambient conditions
- modular design for easy maintenance
- optional high-speed communication interface cards available

DELTA
DELTA ELECTRONICS, INC.

AC motor drives

Series			EL Series								E Series											
			single phase				3 phase					3 phase										
model number VFD-__EL/E/C			002	004	007	015	004	007	015	022	037	004	007	015	022	037	055	075	110	150	185	220
frame size			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
max. applicable motor output		kW	0.2	0.4	0.75	1.5	0.4	0.75	1.5	2.2	3.7	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22
Output rating																						
rated output capacity	NORMAL DUTY	kVA	0.6	1	1.6	2	1.2	2	3.3	4.4	6.8	1.2	2	303	404	6.8	9.9	13.7	18.3	24	29	34
rated output current		A	1.6	2.5	4.2	7.5	1.5	2.5	4.2	5.5	8.2	1.5	2.5	4.2	5.5	8.5	13	18	24	32	38	45
output frequency		Hz	setting range 0.1 – 600Hz									0.1 – 600Hz										
carrier frequency		kHz	2 – 12kHz									1 – 15 kHz										
rated output capacity	HEAVY DUTY	kVA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
rated output current		A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
carrier frequency		kHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Input rating																						
input current (heavy duty)		A	-									-										
input current (normal duty)		A	4.9	6.5	9.5	15.7	1.8	3.2	4.3	7.1	9	1.9	3.2	4.3	7.1	11.2	14	19	26	35	41	49
rated voltage		V	1-phase AC 200 – 240V				3-phase AC 380V – 480V					3-phase AC 380V – 480V 50/60Hz										
operating voltage range		V	180 – 264V ±10%				342 – 528V ±10%					342 – 528V ±10%										
frequency tolerance		Hz	± 5% (47 – 63Hz)									± 5% (47 – 63Hz)										
cooling method			convection	fan	convection		fan cooling					convection		fan cooling								
braking chopper			-									built-in										
DC reactor			-									-										
control method			SPWM (Sinusoidal Pulse Width Modulation) V/f control									SPWM (Sinusoidal Pulse Width Modulation) V/f control										
Starting torque		%	up to 150% at 5.0Hz including auto-torque/slip									up to 150% at 3.0Hz including auto-torque/slip compensation										
V/f Curve			adjustable V/f pattern									adjustable V/f pattern										
torque limit		%	150%									-										
Max. output frequency		Hz	three zones, setting range 0.1 – 600Hz									0.1 – 600Hz										
frequency output accuracy			-									-										
frequency setting resolution		Hz	0,01Hz									0.01Hz										
overload tollerance			150% of rated current for 1 minute									150% of rated current for 1 minute										
frequency setting signal			pot-5k/0.5W, 0 – +10Vdc, 4-20mA RS-485 interface									pot-5k/0.5W, 0 – +10Vdc, 4 - 20mA, RS-485 interface										
accel./decel. Time			0.1 – 600 sec. (2 settings accel/decel time)									0.1 – 600 sec. (2 independent settings accel/decel time)										
main control functions			AVR, accel/decel S-Curve, overvoltage/curren tstall prevention, 5 fault records, reverse inihibition, momentary power loss restart, DC braking, auto torque/ slip compensation, adjustable carrier frequency, output frequency limits, PID control, external counter									built-in PLC, AVR, accel/decel S-Curve, over-voltage/current stall prevention, 5 fault records, reverse inhibition, momentary power loss prevention, DC braking, auto torque/slip compensation, auto tuning, output frequency limits, vector control, PID control, external counter, MODBUS communication, abnormal reset/restart, adjustable carrier frequency, power saving, fan control, NPN/PNP selection										
fan control			fan control									fan control										
motor protection			electronic thermal relay protection									over/under-volt/current, ext. fault, overload, IGBT short circuit, PTC										
over-current protection			yes									yes										
over-voltage protection			yes									yes										
over-temperature protection			yes									yes										
stall prevention			20 – 250% of rated current									20 – 250% of rated current										
re-start after momentary power off			yes									yes										
ground current protection			yes									yes										
EMI filter			built-in									built-in										
dimensions	H	mm	174	174	174		174					142	174				260			310		
	W	mm	72	100	72		100					72	100				130			200		
	D	mm	136	136	136		136					152	152				169			190		
optional accessories			CANopen/Devicenet/LONworks/PROFIBUS modules braking unit, brake resistors, DIN rail mount adaptor									CANopen/Devicenet/LONworks/PROFIBUS modules analogue I/O cards - relay cards - PG card, brake resistors DIN rail mount adaptor - digital keypad										

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AC motor drives

C2000 Series

3 phase

040	055	075	110	150	185	220	300	370	450	550	750	900	1100	1320	1600	1850	2200	2800	3150	3550
A	A	B	B	B	C	C	C	D	D	D	D	E	E	F	F	G	G	H	H	H
4	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	185	220	280	315	355
8.4	10	14	19	25	30	36	48	58	73	88	120	143	175	207	247	295	367	438	491	544
10.5	12	18	24	32	38	45	60	73	91	110	150	180	220	260	310	370	460	550	616	683

normal duty: 0.1 – 600 Hz; heavy duty: 0.00 – 300 Hz

2 – 15kHz				2 – 10kHz								2 – 9kHz								
7.6	9.6	14	18	24	29	34	45	55	69	84	114	136	167	197	235	280	348	417	466	517
9.5	11	17	23	30	36	43	57	69	86	105	143	171	209	247	295	352	437	523	585	649
2 – 15kHz				2 – 10kHz								2 – 9kHz								
14.5	16	19	25	33	38	45	60	70	96	108	149	159	197	228	285	361	380	469	527	594
15.5	17	20	26	35	40	47	63	74	101	114	157	167	207	240	300	380	400	494	555	625

3-phase AC 380V – 480V (-15% – +10%), 50/60Hz

323 – 528 Vac

47 – 63 Hz

fan cooling

built-in							optional													
optional							built-in													

1: V/F,   2: SVC,   3: VF+PG,   4: FOC+PG

up to 150% or above at 0.5Hz; up to 150% at 0Hz for 1 minute

4-point adjustable V/f curve and square curve

max. 200% torque current

normal duty: 0.01 – 600.00Hz;   heavy duty: 0.00 – 300.00Hz

digital command: ± 0.01%, -10°C – +40°C,   analogue command: ± 0.1%, 25 ±10°C

digital command: 0.1Hz, analogue command: 0.03/60Hz (±11 bits)

normal duty: 120%; heavy duty: 150% of rated output current for 1 min.

-10 – +10V,   0 – +10V,   4-20mA,   pulse input

0.00 – 600.00 / 0.0 – 6000.0 seconds

torque control, speed/torque control switching, feed forward control, zero-servo control, momentary power loss ride through, speed search, over-torque detection, torque limit, 16-step speed (including master speed), accel/decel time switch, S-curve accel/decel, 3 wire sequence, auto-tuning (rotational, stationary), dwell, slip compensation, torque compensation, skip frequency, frequency upper/lower limit settings, DC injection braking at start/stop, high slip braking, PID control (with sleep function), energy saving control, MODBUS communication (RS-485 RJ45) max. 115.2kbps, fault restart and parameter copy.

ON/OFF switch			PWM control																	

electronic thermal relay protection

thermal current forces 240% of the over-current protection, current clamp: normal duty 170 – 175%;   heavy duty: 180 – 185%

drive will stop when DC-BUS voltage exceeds 820V

built-in temperature sensor

stall prevention during acceleration, deceleration and running independently

parameter setting can be up to 20 seconds

ground current protection level is 50% of rated current of the AC motor drive

-

250		320		400			550				590		940		1000			1435		
130		190		250			330				370		420		550			700		
170		190		210			275				300		300		397			398		

EtherNet/IP - MODBUS TCP -PROFIBUS-DP - DeviceNet - CANopen communication cards - Relay card (6 relays)

- I/O extension card (4 digital inputs and 2 digital outputs) - input extension card (6 inputs) various PG (encoder) feedback cards

- digital keypad with multi-function keys, warning indicators and fault code display IP56 panel mounting.
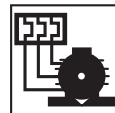
AC motor drives

Delta AC motor drives incorporate superior microprocessor digital control, with high frequency pulse width modulation for smooth motor operation. An extensive array of software control functions, combined with hardware options, provide total solutions for motor automation and control.

Sensorless vector, flux vector and other technologies are employed in a broad range of products, all offer in high torque, smooth operation with low harmonic distortion.
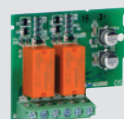
VFD-015EL

VFD-037EL

VFD-007E

VFD-110E

EME-R2CA

type	motor rating	description	dimensions (mm) (H) x (W) x (D)			price

EL series *multi-function micro AC motor drives open-loop control mode*

- output frequency 0.1-600Hz
- high-efficiency cooling and flexible space *(side-by-side installation)*
- standard MODBUS protocol via RS-485
- built-in PID feedback control and EMI filter
- optional fieldbus modules *(Profibus, DeviceNet, LonWorks, CANopen)*
- complete protection function
- built-in front facia keypad for frequency adjustment and start/stop

Single-phase input 180-264V 50/60 Hz *(three-phase output voltage)*

type	motor rating	description	H	W	D	price
VFD002EL21A	200 W	single-phase AC motor drive	142	72	136	1770.00
VFD004EL21A	400 W	single-phase AC motor drive	142	72	136	1860.00
VFD007EL21A	750 W	single-phase AC motor drive	142	72	136	2220.00
VFD015EL21A	1.5 kW	single-phase AC motor drive	174	100	136	2330.00
VFD022EL21A	2.2 kW	single-phase AC motor drive	174	100	136	3350.00

Three-phase 380-480V 50/60 Hz

type	motor rating	description	H	W	D	price
VFD004EL43A	400 W	three-phase AC motor drive	174	72	136	2480.00
VFD007EL43A	750 W	three-phase AC motor drive	174	72	136	2500.00
VFD015EL43A	1.5 kW	three-phase AC motor drive	174	72	136	2800.00
VFD022EL43A	2.2 kW	three-phase AC motor drive	174	100	136	3290.00
VFD037EL43A	3.7 kW	three-phase AC motor drive	174	100	136	3880.00

E series *high-performance micro AC motor drives closed-loop control mode*

- built-in PLC function (easy-to-write PLC programs without additional PLC)
- side-by-side installation (up to 40ºC)
- standard MODBUS protocol via RS-485
- built-in EMI filter (efficiently reduces electromagnetic interference)
- optional fieldbus modules (Profibus, DeviceNet, LonWorks, CANopen)
- flexible extension (via optional cards IO/relay/PG encoder/USB)
- fascia can be replaced with optional keypad KPELE02 (speed change and status indication)

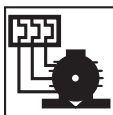**Three-phase 380-480V 50/60 Hz** *(three-phase output voltage)*

type	motor rating	description	H	W	D	price
VFD004E43A	400 W	three-phase AC motor drive	142	72	152	3350.00
VFD007E43A	750 W	three-phase AC motor drive	142	72	152	3400.00
VFD015E43A	1.5 kW	three-phase AC motor drive	142	72	152	3530.00
VFD022E43A*	2.2 kW	three-phase AC motor drive	174	100	152	3980.00
VFD037E43A*	3.7 kW	three-phase AC motor drive	174	100	152	4870.00
VFD055E43A*	5.5 kW	three-phase AC motor drive	260	130	169	6700.00
VFD075E43A*	7.5 kW	three-phase AC motor drive	260	130	169	7550.00
VFD110E43A*	11.0 kW	three-phase AC motor drive	260	130	169	9980.00
VFD150E43A*	15.0 kW	three-phase AC motor drive	310	200	190	12110.00
VFD185E43A*	18.5 kW	three-phase AC motor drive	310	200	190	15100.00
VFD220E43A*	22.0 kW	three-phase AC motor drive	310	200	190	16690.00

* *built-in braking chopper*

Accessories *for EL and E series drives*			for drives	
CMECOP01	CANopen network adaptor		VFD-E/EL	1640.00
CMEDN01	DeviceNet communication module		VFD-E/EL	1060.00
CMELW01	LonWorks communication module		VFD-E/EL	2050.00
CMEPD01	Profibus communication module		VFD-E/EL	2470.00
KPELE02	digital display / keypad for speed change/status		VFD-E	170.00
EG2010A	cable for door-mounted keypad to drive (2 meter)		VFD-E	225.00
CMEUSB01	USB card for VFD-E parameter setting/programming		VFD-E	560.00
EMEA22A	plug-in analogue I/O card (2AI/2AO)		VFD-E	450.00
EMED33A	plug-in I/O card (photocoupler 3in + 3out)		VFD-E	240.00
EMEPG01	plug-in pulse generator card (open collector 24Vdc 50mA)		VFD-E	370.00
EMER2CA	plug-in relay card (2 x changeover contacts)		VFD-E	275.00
EMER3AA	plug-in relay card (3 x normally open contacts)		VFD-E	295.00
MKEDRA	DIN-rail adaptor for "A" frame (004-015E)		VFD-E	64.00
MKEDRB	DIN-rail adaptor for "B" frame (022-037E)		VFD-E	70.00

Above prices do not include VAT. E&OE

AC motor drives

C2000 series drives utilise FOC (field-oriented control) as the core technology to fulfil demands for high starting torque, accurate speed and torque control. Suitable for many applications, they offer PID adjustment, simple operation interface, flexible I/O extensions, fieldbus modules, wide power range, complete protection, adaption to harsh temperature conditions, long-life design, compliance with global safety standards (CE/UL/cUL), easy maintenance, low malfunction rate and self diagnostics.

C2000 series *high-performance FOC AC motor drive*

- speed/torque/position control mode, dual rating design (normal/heavy duty)
- improved sensorless vector control (SVC) response and torque control for crane applications
- outstanding 4-quadrant torque control/limit
- intelligent PLC function (10k steps, 19 points: 10DI/4DO - 3AI/2AO)
- synchronous position control
- enhanced protection and environmental adaptability design
- modular design for ease of maintenance with many expansion extensions
- high-speed communication interface with built-in CANopen and MODBUS
- control modes: VF, SVC, VF+PG,FOC+PG, TQC+PG, FOC sensorless, FOC+PM+PG
- torque ability: up to 150% at 0.5Hz, FOR FOC+PG up to 150% at 0Hz

type	motor rating	description	frame size	dimensions (mm) (H) x (W) x (D)			price
Three-phase 380-480Vac 50/60 Hz							
VFD040C43E∗	4.0 kW	3-phase AC motor drive	A	250	130	170	**9150.00**
VFD055C43E∗	5.5 kW	3-phase AC motor drive	A	250	130	170	**9520.00**
VFD075C43E∗	7.5 kW	3-phase AC motor drive	B	320	190	190	**10680.00**
VFD110C43E∗	11.0 kW	3-phase AC motor drive	B	320	190	190	**12440.00**
VFD150C43E∗	15.0 kW	3-phase AC motor drive	B	320	190	190	**15480.00**
VFD185C43E∗	18.5 kW	3-phase AC motor drive	C	400	250	210	**19230.00**
VFD220C43E∗	22.0 kW	3-phase AC motor drive	C	400	250	210	**21700.00**
VFD300C43E∗	30.0 kW	3-phase AC motor drive	C	400	250	210	**27160.00**
VFD370C43A	37.0 kW	3-phase AC motor drive	D	550	330	275	**26680.00**
VFD450C43A	45.0 kW	3-phase AC motor drive	D	550	330	275	**31200.00**
VFD550C43A	55.0 kW	3-phase AC motor drive	D	550	330	275	**36170.00**
VFD750C43A	75.0 kW	3-phase AC motor drive	D	550	330	275	**49550.00**
VFD900C43A	90.0 kW	3-phase AC motor drive	E	589	370	300	**67820.00**
VFD1100C43A	110.0 kW	3-phase AC motor drive	E	589	370	300	**79820.00**
VFD1320C43A	132.0 kW	3-phase AC motor drive	F	940	420	300	**92930.00**
VFD1600C43A	160.0 kW	3-phase AC motor drive	F	940	420	300	**106820.00**

∗ *built-in braking chopper and EMI filter.*
larger sizes (up to 355 kW) available on request

Accessories *for C2000 series drives*

KPC-CC01	keypad with LCM display, parameters backup function	**915.00**
CMC-EIP01	EtherNet communication card, supports EtherNet/IP protocol	**1105.00**
CMC-MOD01	EtherNet communication card, supports MODBUS TCP protocol	**970.00**
CMC-DN01	DeviceNet communication card, 125kbps / 250kbps / 500kbps	**1445.00**
CMC-PD01	PROFIBUS-DP communication card, 9.6kbps - 12Mbps	**2660.00**
EMC-COP01	CANopen communication card, 50kbps - 1Mbps	**570.00**
EMC-D42A	4DI / 2DO extension card, DC 24V	**295.00**
EMC-R6AA	6 relay outputs extension card	**480.00**
MKC-KPPK	keypad remote panel adapter (IP56)	**256.00**
MKC-DNICB	conduit box/guard cover for frame D drives	**1415.00**
MKC-ENICB	conduit box/guard cover for frame E drives	**1630.00**
MKC-FNICB	conduit box/guard cover for frame F drives	**2240.00**

PG (encoder) cards *300 k pulse/sec. 5 Vdc 50 mA pulse output with frequency divide function*

EMC-PG01L	5 Vdc supply to encoder, line-drive (A, B, Z)	**1330.00**
EMC-PG01O	5 or 12 Vdc power supply to encoder, open-collector	**1025.00**
EMC-PG01U	5 Vdc power supply to encoder, line-drive (A, B, Z, U, V, W)	**1430.00**
EMC-PG01R	resolver output 7 Vrms, input 3.5 Vrms 10kHz, (R1, R2, S1, S2, S3, S4)	**1400.00**

EMC/EMI industrial mains filters *for C2000 drives*

conform to UL1283 and EN133200, and meet EN55011A and EN55022B legislation requirements fully

type	description	for drive	dimensions (mm) (H) x (W) x (D)			price
MIF3150	EMI industrial filter	VFD370 - 750C43A	984	369	81	**9600.00**
MIF3400B	EMI industrial filter	VFD900 - 1600C43A	873	420	110	**11200.00**

VFD150C

VFD220C

VFD370C

VFD900C

Above prices do not include VAT. E&OE

AC motor drives

new
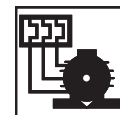
To achieve greater energy savings, Delta introduces the sensorless vector-control CP2000 drive for pump and fan applications and HVac systems. Designed specifically for related applications with an intelligent PID controller.

Functions such as sensorless vector control, multi-segment V/F control curve and soft start greatly improve the efficiency of the fluctuating torque load and constant output load.

type	motor rating	description	dimensions (mm) (H) x (W) x (D)			price
CP2000 series *fan and pump purpose drives*						

- quick setting mode and user defined parameter management, simple and quick to install
- built-in MODBUS and BACnet expandable with extension cards
- built-in PLC 10K steps and real-time clock and calendar
- multi pumps control/circulation functions
- skip frequency funtion (avoids motor vibration at specific frequency bandwidths)
- enhanced PCB coating ensures reliability in harsh environments.

Three-phase 380 - 460Vac 50/60Hz

type	motor rating	description	H	W	D	price
VFD015CP4EA-21*	1.5 kW	3-phase pump and fan drive	250	130	170	**6300.00**
VFD022CP4EA-21*	2.2 kW	3-phase pump and fan drive	250	130	170	**6660.00**
VFD040CP4EA-21*	4.0 kW	3-phase pump and fan drive	250	130	170	**8830.00**
VFD055CP4EA-21*	5.5 kW	3-phase pump and fan drive	250	130	170	**9250.00**
VFD075CP4EA-21*	7.5 kW	3-phase pump and fan drive	250	130	170	**10060.00**
VFD110CP4EA-21*	11.0 kW	3-phase pump and fan drive	320	190	190	**11560.00**
VFD150CP4EA-21*	15.0 kW	3-phase pump and fan drive	320	190	190	**13110.00**
VFD185CP4EA-21*	18.5 kW	3-phase pump and fan drive	320	190	190	**16400.00**
VFD220CP4EA-21*	22.0 kW	3-phase pump and fan drive	400	250	210	**19150.00**
VFD300CP4EA-21*	30.0 kW	3-phase pump and fan drive	400	250	210	**21890.00**
VFD370CP4EA-21*	37.0 kW	3-phase pump and fan drive	400	250	210	**29610.00**
VFD450CP43A-21	45.0 kW	3-phase pump and fan drive	550	330	275	**31380.00**
VFD550CP43A-21	55.0 kW	3-phase pump and fan drive	550	330	275	**37610.00**
VFD750CP43A-21	75.0 kW	3-phase pump and fan drive	550	330	275	**45120.00**
VFD900CP43A-21	90.0 kW	3-phase pump and fan drive	550	330	275	**54350.00**
VFD1100CP43A-21	110.0 kW	3-phase pump and fan drive	589	370	300	**67050.00**

* *EMI filter and built-in braking chopper up to 37 kW, above 37 kW built-in DC choke*

- *larger sizes up to 400 kW available on request*
- *expansion cards for above, same as C2000 drives (except PG cards)*

L series *sub-fractional general purpose drive (ultra compact)*

- output frequency 1.0~ 400Hz
- adjustable V/F curve control
- built-in MODBUS communication *(baud rate up to 9600 bps)*
- built-in EMI filter

Single-phase input 180-264V 50/60 Hz *(three-phase output voltage)* NPN inputs

type	motor rating	description	H	W	D	price
VFD40WL21B	40 W	panel-mount 1ph AC motor drive	100	60	136	**1420.00**
VFD001L21B	100 W	panel-mount 1ph AC motor drive	100	60	156	**1530.00**
VFD002L21B	200 W	rail-mount 1ph AC motor drive	132	68	128	**1740.00**
VFD004L21B	400 W	rail-mount 1ph AC motor drive	132	68	128	**1880.00**
VFD007L21B	750 W	rail-mount 1ph AC motor drive	132	68	128	**2090.00**

**B series** *general purpose drives 500-600 Vac*

- sensorless open and closed loop vector AC drive
- output frequency 0.1~400Hz
- adjustable V/f curve and vector control
- 16-step speed control and 15-step preset speed process control
- built-in PID feedback control
- auto torque boost and slip compensation
- built-in MODBUS communication
- built-in PLC functions

Three-phase 500-600Vac 50/60Hz

type	motor rating	description	H	W	D	price
VFD015B53A*	1.5 kW	3-phase AC motor drive	185	118	160	**5300.00**
VFD022B53A*	2.2 kW	3-phase AC motor drive	260	150	160	**6420.00**
VFD037B53A*	3.7 kW	3-phase AC motor drive	260	150	160	**6920.00**
VFD055B53A*	5.5 kW	3-phase AC motor drive	323	200	184	**9570.00**
VFD075B53A*	7.5 kW	3-phase AC motor drive	323	200	184	**11020.00**
VFD110B53A*	11.0 kW	3-phase AC motor drive	323	200	184	**13950.00**
VFD150B53A	15.0 kW	3-phase AC motor drive	323	200	184	**16980.00**
VFD220B53A	22.0 kW	3-phase AC motor drive	430	250	205	**23980.00**
VFD300B53A	30.0 kW	3-phase AC motor drive	430	250	205	**34190.00**
VFD370B53A	37.0 kW	3-phase AC motor drive	430	250	205	**39540.00**
VFD450B53A	45.0 kW	3-phase AC motor drive	589	370	260	**47730.00**
VFD550B53A	55.0 kW	3-phase AC motor drive	589	370	260	**60550.00**
VFD750B53A	75.0 kW	3-phase AC motor drive	589	370	260	**71630.00**

* built-in braking chopper   see braking units on page **112**

VFD150CP

VFD220CP

VFD-40W

VFD-004L

VFD-450B

Above prices do not include VAT. E&OE
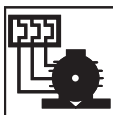
Special purpose drives
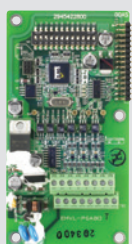
VL series AC motor drives are specifically designed for elevator applications. Their innovative control technology ensures reliable and safe motor brake control, backup power supply, built-in brake loop, auto-tuning of motor parameters, self protection and supports numerous encoder and communication interfaces.

VFD185VL

type	motor rating (kW)	description	dimensions (mm) (H) x (W) x (D)			price

VL series *special elevator drives for induction or permanent magnet motors*

- high-performance FOC for smooth, comfortable operation of elevator
- S-curve acceleration/deceleration
- built-in MODBUS communication interface
- compliant with EN 954-1 (safety-relay) standard
- auto-correct start torque, load compensation with manual adjustment for smooth ride
- support for emergency power supply (EPS)

Three-phase 380-460Vac 50/60 Hz

type	motor rating (kW)	description	H	W	D	price
VFD055VL43A*	5.5 kW	3-phase special elevator drive	350	235	136	9480.00
VFD075VL43A*	7.5 kW	3-phase special elevator drive	350	235	136	10830.00
VFD110VL43A*	11.0 kW	3-phase special elevator drive	350	235	136	13130.00
VFD150VL43A*	15.0 kW	3-phase special elevator drive	404	255	168	15710.00
VFD185VL43A*	18.5 kW	3-phase special elevator drive	404	255	168	20740.00
VFD220VL43A*	22.0 kW	3-phase special elevator drive	404	255	168	23310.00
VFD300VL43A	30.0 kW	3-phase special elevator drive	595	370	260	35260.00
VFD370VL43A	37.0 kW	3-phase special elevator drive	595	370	260	40250.00
VFD450VL43A	45.0 kW	3-phase special elevator drive	595	370	260	47300.00

* *built-in braking chopper up to 22 kW – larger sizes available on request*

Accessories *for VL Series*

KPVL-CC01

EMVL-SAF01

KPV-LCC01	optional digital keypad	1001.00
EMV-LIODA01	I/O and D/A extension card	1040.00
EMV-LSAF01	safety relay card	870.00

PG cards

EMVL-PGABL-1	ABZ/UVW line-drive encoder card, 5 or 12 Vdc supply to encoder	805.00
EMVL-PGABO	ABZ open collector encoder card, 12 Vdc supply to encoder	805.00
EMVL-PGH01	HEIDENHAIN absolute incremental encoder card (ERN1387)	1405.00
EMVL-PGS01	HIPERFACE SRS50/60, EnDat 2.1 line-drive or open collector encoder	1200.00

DD series *elevator door drive*

DD series AC motor drives (specifically designed for elevator door applications) feature door width auto-tuning with precise open and close control and smooth door open curve and blocking detection.

- user friendly design   • door width auto-tuning   • smooth door re-open curve
- multiple door control solutions: distance control / speed control / multi-step speed control modes
- induction motor (asynchronous) and permanent magnet motor (synchronous)
- safety protection and blockage detection (four steps)

Single-phase 230Vac 50/60Hz

VFD004DD21A   ECMDB9160GMS

VFD004DD21A	0.4 kW	1-phase elevator door drive	170	215	55	2950.00
VFD004DD21AB*	0.4 kW	1-phase elevator door drive	170	215	55	3480.00

* *with built-in brake and resistor*

Slimline sliding door motor *DC brushless motor*

- ultra-slim design (55 mm) • instant torque up to 3 Nm
- flexible installation (front or back side installation)

ECMDB9160GMS		slim sliding door motor	160	160	55	2995.00

Braking units *for all drives* *

Braking units are applied to absorb motor regeneration energy when three-phase motors are stopped by deceleration – the regeneration energy is dissipated by braking resistors.

VFDB4030

BUE20015	up to 1.5 kW	single-phase 230Vac	for E/EL series	580.00
BUE40015	up to 1.5 kW	three-phase 460Vac	for E/EL series	890.00
BUE40037	up to 3.7 kW	three-phase 460Vac	for E/EL series	1420.00
VFDB4030	up to 30 kW	three-phase 460V	for C2000 and B series	4580.00
VFDB4045	up to 45 kW	three-phase 460V	for C2000 and B series	4450.00
VFDB4110	up to 110 kW	three-phase 460V	for C2000 and B series	13440.00
VFDB4132	up to 132 kW	three-phase 460V	for C2000 and B series	14080.00
VFDB4160	up to 160 kW	three-phase 460V	for C2000 and B series	15360.00
VFDB5055	up to 55 kW	three-phase 575V	for B series	6400.00

* *for number of brake units required per drive and brake resistor selection, see page 274*

Programmable logic controllers (PLCs)

Delta high-performance, high-speed DVP series PLCs are most efficient and incorporate communication capabilities. Advantages include numerous built-in convenient commands for easy operation access and communication function monitoring.

The module-type unit affords tremendous space-saving, allowing simple, clip-on expansion possibilities. The PLCs high performance and extensive I/O units represent a high-value solution for machine control and industrial automation.

Common characteristics

- compact dimensions (H) 90 mm x (D) 60 mm DIN-rail mounting
- built-in high speed counters 20-200 kHz (model dependant)
- clip-on extension modules – general (right side), high-speed (left side) (model dependant)
- plug-in terminals for ease of wiring and maintenance
- dual communication ports RS-232 and RS-485 MODBUS ASCII/RTU
- program language: (IL) instruction list, (LD) ladder diagram, (SFC) sequential function chart.
- 24 Vdc supply

DVP14SS

type	supply	input (DI)	outputs (DO)	output types	price

SS2 series *"standard" MPU compact ultra-slim (25.2 mm wide)*

- MPU points: 14 points (8DI + 6DO) expandable to 480 points
- program capacity: 8k steps
- built-in RS-232 and RS-485 com ports compatible with MODBUS ASCII/RTU protocol
- high speed pulse outputs, supports 4 x (Y0 - Y3) max. 10kHz
- built-in high speed counters 20kHz
- supports PID auto tuning

type	supply	input (DI)	outputs (DO)	output types	price
DVP14SS211R	24 Vdc	8	6	relay	**1150.00**
DVP14SS211T	24 Vdc	8	6	transistor	**1150.00**

DVP12SA2

SA2 series *"advanced" MPU compact slim (37.4 mm wide)*

- MPU points: 12 points (8DI + 4DO) expandable to 480 points
- program capacity: 16k steps
- built-in RS-232 and 2 x RS-485 com ports compatible with MODBUS ASCII/RTU protocol
- high-speed pulse outputs, supports 2 x (Y0, Y2) 100kHz and 2 x (Y1, Y3) 10kHz
- built-in high-speed counters 100kHz
- accepts (left side) high-speed expansion interfaces
- built-in RTC (real time clock)
- supports PLC-Link (max. speed:921 kbps)

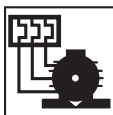| type	supply	input (DI)	outputs (DO)	output types	price
DVP12SA211R	24 Vdc	8	4	relay	**1620.00**
DVP12SA211T	24 Vdc	8	4	transistor	**1620.00**

SX2 series *"analogue" MPU compact (70 mm wide)*

- MPU points: 20 points (8DI/6DO, 4AI/2AO) expandable to 480 points
- program capacity: 16k steps
- built-in RS-232 and 1 x RS-485 COM ports compatible with MODBUS ASCII/RTU protocol
- high-speed pulse outputs, supports 2 x (Y0, Y2) 100kHz and 2 x (Y1, Y3) 10kHz
- built-in high-speed counters 100kHz/supports linear/arc interpolation
- 4 analogue inputs / 2 analogue outputs (-20 to 20mA, -10 to 10V, 4 to 20mA)
- accepts (left side) high-speed expansion interfaces
- supports PLC-Link (max. speed:921 kbps)
- built-in USB communication port

DVP20SX2

type	supply	input (DI) digital	input (DI) analogue	outputs (DO) digital	outputs (DO) analogue	output types	price
DVP20SX211R	24 Vdc	8	4	6	2	relay	**2870.00**
DVP20SX211T	24 Vdc	8	4	6	2	transistor (NPN)	**2870.00**
DVP20SX211S	24 Vdc	8	4	6	2	transistor (PNP)	**2870.00**

28SV series *"high performance" MPU compact (70 mm wide)*

- MPU points: 28 points (16DI + 12DO) expandable to 512 points
- program capacity: 16k steps
- instruction execution speed : 0.24µs (basic instruction)
- data register: 10k word file register
- built-in RS-232 and RS-485 COM ports compatible with MODBUS ASCII/RTU protocol
- high-speed pulse outputs, supports 2 x (Y0,Y1) (Y2,Y3) 200kHz and 2 x (Y4,Y6) 200kHz
- four built-in high-speed counters 200 kHz.
- accepts (left side) high-speed expansion interfaces
- supports linear/arc interpolation

DVP28SV

type	supply	input (DI)	outputs (DO)	output types	price
DVP28SV11R	24 Vdc	16	12	relay	**3070.00**
DVP28SV11T	24 Vdc	16	12	transistor	**3200.00**

Above prices do not include VAT. E&OE

Extension modules and accessories

Digital I/O extension modules *(clip-on to SS2/SA2/SX2/SV MPUs)*

type	supply	input (DI)	outputs (DO)		output type	price
DVP08SM11N	24 Vdc	8	–		–	430.00
DVP16SM11N	24 Vdc	16	–		–	710.00
DVP32SM11N*	24 Vdc	32	–		–	920.00
DVP06SN11R	24 Vdc	–	6	(max. 6A)	relay	850.00
DVP08SN11R	24 Vdc	–	8	(max. 1.2A)	relay	640.00
DVP08SN11T	24 Vdc	–	8		transistor	640.00
DVP16SN11T	24 Vdc	–	16		transistor	825.00
DVP32SN11TN*	24 Vdc	–	32		transistor	1010.00

* pin head termination. Requires cable and terminal block (see accessories below)

type	supply	input (DI)	outputs (DO)		output type	price
DVP08SP11R	24 Vdc	4	4		relay	660.00
DVP16SP11R	24 Vdc	8	8		relay	730.00
DVP08SP11T	24 Vdc	4	4		transistor	660.00
DVP16SP11T	24 Vdc	8	8		transistor	730.00
DVP16SP11TS	24 Vdc	8	8	(PNP type)	transistor	790.00

Analogue I/O extension modules

type	supply	(AI)	(AO)		output type	price
DVP04ADS	24 Vdc	4	–		analogue	1440.00
DVP06ADS	24 Vdc	6	–		analogue	1550.00
DVP02DAS	24 Vdc	–	2		analogue	1730.00
DVP04DAS	24 Vdc	–	4		analogue	2170.00
DVP06XAS	24 Vdc	4	2		analogue	1600.00

Temperature measurement modules

type	supply			price
DVP04PTS	24 Vdc	4	PT100 temperature module	1720.00
DVP04TCS	24 Vdc	4	thermocouple type (J,K,R,S,T)	1720.00

Motion control modules

type	supply		price
DVP01PUS	single-axis	positioning/motion control module	2350.00

Communication modules

type	supply			price
DVPDT01S	DeviceNet	communication module	slave	2260.00
DVPPF01S	Profibus	communication module	slave	3500.00

High-speed expansion modules *for SA2/SX2/SV (left side mounting)*

type	supply					price
DVP04ADSL	24 Vdc	4	–	16-bit res.	analogue	1970.00
DVP04DASL	24 Vdc	–	4	16-bit res.	analogue	2820.00
DVP02LCSL	24 Vdc		load cell module			3590.00
DVPPF02SL	Profibus		communication module		slave	2440.00
DVPDNETSL	DeviceNet		communication module		(master)	2270.00
DVPCOPMSL	CANopen		communication module		(master)	2270.00
DVPEN01SL	Ethernet	(MODBUS TCP/IP)	communication module			2280.00
DVPSCM12SL			serial communication solution			2690.00

Power supply module *(DIN-rail mounting)*

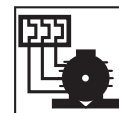| type	supply		price
DVPPS01	100-240 Vac to 24 Vdc	1A power supply module	315.00
DVPPS02	100-240 Vac to 24 Vdc	2A power supply module	405.00

Accessories

type	description			price
DVP08ST11N	input point switch module for DVP-S series			760.00
DVPPCC01	program-data backup/copy module for all DVP series			700.00
DVPACAB2A30	program upload/download cable, PC<->PLC (9 PIN D-SUB)		(3 meter)	105.00
DVPACAB7A10	connection cable for	DVP32SM11N	(1 meter)	340.00
DVPAETBID32A	terminal board (32 points) for	DVP32SM11N		500.00
DVPACAB7B10	connection cable for	DVP32SN11TN	(1 meter)	340.00
DVPAETBOR16A	terminal board (16 points), relay out for	DVP32SN11TN	(2 required)	870.00

Software *(MS-Windows based) easy to learn and use with provided "help" file*

type	description			price
ISP SOFT	programming software for SS2/SA2/SX2/SV *(or freely downloadable via internet)*		(CD)	180.00

DVP08SM

DVP04DA

DVP04PT

DVP02LC

DVPEN01

DVPPS01

DVPAETBID32A

Above prices do not include VAT. E&OE

Programmable logic controllers (PLCs)

ES2 series PLCs are compact highly efficient, functional instruments with incorporated communication capabilities. Advantages such as built-in convenient commands offer easy access to operation and communication function monitoring.

- MPU I/O points: 16, 20, 24, 32, 40, 60 points
- expandable (with plug-in extension modules) up to max. 256 points
- program capacity: 16k steps / execution speed: 0.54µs
- data register: 10k words
- three built-in COM ports – 1x RS-232 and 2x RS-485 ports, Modbus ASCII/RTU protocol compatible (can be master or slave)
- eight built-in high-speed input points (2 for 100 kHz, 6 for 10 kHz)
- supports UFO, UID Dir, CW/CCW, AIB, counting modes
- four built-in high-speed pulse output points (2 for 100 kHz, 2 for 10 kHz);
- supports pulse, pulse DIR, AIB, CW/CCW modes
- emerging industry application: exclusive instruction and function blocks for PV solar tracking
- handy frequency inverter instructions for controlling Delta motor drives
- compact: (H) 110 x (D) 78 x (W) 16:105 / 24:125 / 32:145 / 40:165 / 60:225 (mm)

DVP16ES

DVP32ES

ES2 series standard MPU *100-240V AC*

- MPU I/O 14,20,24,32,40,60 points (extendable to 256 points)
- cost effective / plug-in termination
- DIN rail mounting or chassis mount

type	supply (-15%+10%)	input (DI)	outputs (DO)	output types	price
DVP16ES200R	100-240 Vac	8	8	relay	**1880.00**
DVP24ES200R	100-240 Vac	16	8	relay	**2280.00**
DVP32ES200R	100-240 Vac	16	16	relay	**2590.00**
DVP40ES200R	100-240 Vac	24	16	relay	**2960.00**
DVP60ES200R	100-240 Vac	36	24	relay	**4090.00**
Transistor output					
DVP16ES200T	100-240 Vac	8	8	transistor	**1880.00**
DVP24ES200T	100-240 Vac	16	8	transistor	**2280.00**
DVP32ES200T	100-240 Vac	16	16	transistor	**2590.00**
DVP40ES200T	100-240 Vac	24	16	transistor	**2960.00**
DVP60ES200T	100-240 Vac	36	24	transistor	**4090.00**

DVP20EX

EX2 special function MPU - *digital and analogue (+/- 10V or +/- 20mA) inputs and outputs*

type	supply	digital	analogue	digital	analogue	output types	price
DVP20EX200R	100-240 Vac	8	4	6	2	relay	**2650.00**
DVP20EX200T	100-240 Vac	8	4	6	2	transistor	**2650.00**

I/O extension modules *for ES2/EX2 series – 24V DC supply*

- 24 Vdc supply derived from MPU (limited to 12 W)
- plugs into right side of MPU

DVP16XP2

Digital input modules

type	supply	input	outputs	output types	price
DVP08XM211N	24 Vdc	8	–	–	**530.00**
DVP16XM211N	24 Vdc	16	–	–	**950.00**
DVP08XN211R	24 Vdc	–	8	relay	**860.00**
DVP16XN211R	24 Vdc	–	16	relay	**1330.00**
DVP08XP211R	24 Vdc	4	4	relay	**690.00**
DVP16XP211R	24 Vdc	8	8	relay	**1280.00**
DVP08XN211T	24 Vdc	–	8	transistor	**860.00**
DVP16XN211T	24 Vdc	–	16	transistor	**1330.00**
DVP08XP211T	24 Vdc	4	4	transistor	**690.00**
DVP16XP211T	24 Vdc	8	8	transistor	**1280.00**

I/O extension modules *for ES2/EX2 series – 230 Vac power supply required*

- output supply for other DC modules 24 Vdc 100 mA (2.4 W)

type	supply	input	outputs	output types	price
DVP24XN200R	100-240 Vac	–	24	relay	**1850.00**
DVP24XP200R	100-240 Vac	16	8	relay	**1590.00**
DVP32XP200R	100-240 Vac	16	16	relay	**2090.00**
DVP24XN200T	100-240 Vac	–	24	transistor	**1850.00**
DVP24XP200T	100-240 Vac	16	8	transistor	**1590.00**
DVP32XP200T	100-240 Vac	16	16	transistor	**2090.00**
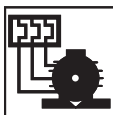
DVP24XN

Above prices do not include VAT. E&OE

Programmable logic controllers (PLCs)

Analogue extension modules *for ES2/EX2 series*

- voltage (±10 V, ±5 V) / current (±20 mA, 0-20 mA, 4-20 mA) inputs and/or outputs
- resolution: 14-bit (-32000~+32000) / (0~+32000) DVP02/04DA
- digital / analogue photocoupler isolation (not between channels)

		analogue inputs	analogue outputs		
DVP04ADE2	24 Vdc	4	–	analogue/inputs	1480.00
DVP02DAE2	24 Vdc	–	2	analogue/outputs	1720.00
DVP04DAE2	24 Vdc	–	4	analogue/outputs	2060.00
DVP06XAE2	24 Vdc	4	2	analogue I/O	2060.00

DVP04AD

Temperature measurement modules *for ES2/EX2 series*

type	supply	description	price

4 points platinum RTD resistance

- resolution: 16-bit
- digital/analogue photocoupler isolation (not between channels)
- built-in PID temperature control

DVP04PTE2	24 Vdc	4 points resistance (Pt 100, Pt 1000, Ni 100/1000)	1910.00

Temperature sensor input: 0-300Ω resistance input

DVP06XA

4 points of thermocouple *(J, K, R, S, T, E, N type)*

- resolution: 16-bit
- digital/analogue photocoupler isolation (also between channels)
- built-in PID control

DVP04TCE2	24 Vdc	4 points of thermocouple (J, K, R, S, T, E, N type)	1910.00

Temperature sensor input: -80 mV~+80 mV voltage input

DVP-EC 3 series econo PLC *100-240Vac*

EC-3 series is the most economical solution for sequential control and communication monitoring for small PLCs

- MPU I/O points: 10/14/16/24 points (not expandable)
- program capacity: 4K steps
- COM ports: built-in RS-232 port (RS-485 port for EC16 and EC24)
- high-speed pulse output (max. 11 kHz pulse output)
- built-in high speed counters (2x 20/10 kHz, 1x 20 kHz, 1x 4 kHz)
- DIN-rail or chassis mount
- compact: (H) 90 x (D) 45.5 x (W) 10 / 14 / 16:95 24:150 (mm)

DVP04PT

type	supply	input (DI)	outputs (DO)	output types	price
DVP10EC00R3	100-240 Vac	6	4	relay	1200.00
DVP14EC00R3	100-240 Vac	8	6	relay	1320.00
DVP16EC00R3	100-240 Vac	8	8	relay	1480.00
DVP24EC00R3	100-240 Vac	12	12	relay	1830.00

DVP16EC

Accessories *for ES2 / EC3 series PLCs*

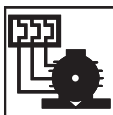| DVPACAB2A30	cable: PC (9-pin D-sub) to PLC (3 meter)	105.00
DVPPCC01	program/data copy module for all DVP series	700.00

Software *(MS-Windows, 2000, XP, Vista, Windows 7 - 32 Bit / 64 Bit)*

New programming software: supports ladder diagram, function block and many other programming modes; allows program editing in a modular way; saves time in large project development by allowing repetitive use of already-made function blocks.
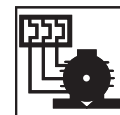
ISPsoft	programming software tool (compact disc) *(or freely downloadable via internet)*	180.00

DVP-PPCC01

Above prices do not include VAT. E&OE

- colour display (65536 colours)
- touch screen
- compatable with other PLC's
- ample COM ports
- user friendly software
- IP65 front panel

HMI		DOP-AS35THTD	DOP-B04S211	DOP-B05S101	DOP-B07S515	DOP-B07E515	DOP-B07S415
							widescreen
						Ethernet	
display specifications	display type	TFT LCD	TFT LCD	TFT LCD	TFT LCD		
	display color	65536 colors	65536 colors	65536 colors	65536 colors		
	resolution	320 x 240 pixels	480 x 272 pixels	320 x 234 pixels	800 x 600 pixels		800 x 480 pixels
	backlight	LED backlight	LED backlight	LED backlight	LED backlight		
	display size (mm)	3.5" (70.8 x 52.56)	4.7" (103.7 x 58.8)	5.6" (113.3 x 84.7)	7" (141 x 106)		7" (152.4 x 91.5)
operating system		Delta real time OS					
MCU		32-bit RISC micro-controller					
NOR flash ROM	Flash ROM	2MB	2MB	8MB	128MB		
	OS system	1MB	1.7MB	2MB	30MB / backup: 16MB		
	User application	1MB	0.3MB	6MB	82MB		
SDRAM		8Mbytes	–	8Mbytes	64Mbytes		
backup memory		128Kbytes	–	128Kbytes	16Mbytes		
sound effect output		85dB buzzer	multi-tone frequency (2k - 4k Hz) 85dB				
stereo output 3.5 mm mini jack		–	–	–	yes		–
ethernet interface	built-in isolated power circuit	–	–	–	IEEE 802.3µ/IEEE 802.3u 10/100 Mbps auto sensing		–
memory card		–	–	–	SD card (support SDHC)		
USB host		1 USB Ver 1.1	–	1 USB host Ver 1.1			
USB client		1 USB Ver 1.1	1 USB Ver 1.1	1 USB Ver 1.1	1 USB Ver 2.0		
serial COM port	COM1	RS-232	RS-232 (supports hardware flow control)				
	COM2	RS-422/485	–	RS-232/RS-485	RS-232/422/485	RS-232/RS-422/RS-485 built-in isolated power circuit	RS-232/422/485
	COM3	RS-232	–	RS-232/485	RS-232/422/485	RS-232/RS-422/RS-485 built-in isolated power circuit	RS-232/422/485
function keys		4x user defined keys + 1x system key	N/A				
perpetual calendar (RTC)		built-in					
cooling method		natural air circulation					
safety approval		CE / UL /KCC					
IP degree		IP65 / NEMA4					
operating voltage		DC +24V (-10% to +15%) (please use isolated power supply)				DC +24V (-10% to +15%) (has built-in isolated power circuit)	DC +24V (-10% to +15%) (please use isolated power supply)
power consumption		3.36W	2.6W	3.0W	5.0W	7.7W	7.7W
backup battery		3V lithium battery CR2032 x1					
backup battery life		±5 years	±3 years				
operating temperature		0°C to 50°C	0°C to 50°C				
storage temperature		-20°C to 60°C	-20°C to 60°C				
ambient humidity		10 - 90% RH (0 to 40°C) / 10% to 55% RH (41 to 50°C) pollution degree 2					
vibration resistance		IEC61131-2 compliant 5Hz≤f<9Hz = continuous: 1.75 mm / occasional: 3.5 mm 9Hz≤f≤150Hz = continuous: 0.5g/occasional: 1.0g X, Y, Z directions for 10 times					
dimensions (W) x (H) x (D)	mm	141 x 105 x 45	143 x 98 x 31.2	184 x 144 x 50	184 x 144 x 50		215 x 161 x 50
panel cutout (W) x (H)	mm	119 x 93	138 x 93	172.4 x 132.4	172.4 x 132.4		196.9 x 142.9
weight	(approx.)	370g	295g	670g	800g		970g

DOP-B07E415	DOP-B08S515	DOP-B08E515	DOP-B10S615	DOP-B10E615
widescreen			widescreen	widescreen
Ethernet		Ethernet		Ethernet
TFT LCD	TFT LCD		TFT LCD	
65536 colors	65536 colors		65536 colors	65536 colors
800 x 480 pixels	800 x 600 pixels		1024 x 600 pixels	803 x 480 pixels
LED backlight	LED backlight		LED backlight	LED backlight
7" (152.4 x 91.5)	8" (162 x 121.5)		10" (226 x 129)	
Delta real time OS				
32-bit RISC micro-controller				
128MB				
30MB / backup: 16MB				
82MB				
64Mbytes				
16Mbytes				
multi-tone frequency (2k - 4k Hz) 85dB				
yes	–	yes	–	yes
IEEE 802.3µ/IEEE 802.3u 10/100 Mbps auto sensing	–	IEEE 802.3µ/IEEE 802.3u 10/100 Mbps auto sensing	–	IEEE 802.3µ/IEEE 802.3u 10/100 Mbps auto sensing
SD card (support SDHC)				
1 USB host Ver 1.1				
1 USB Ver 2.0				
RS-232 (supports hardware flow control)				
RS-232/RS-422/RS-485 built-in isolated power circuit	RS-232/422/485	RS-232/RS-422/RS-485 built-in isolated power circuit	RS-232/422/485	RS-232/RS-422/RS-485 built-in isolated power circuit
RS-232/RS-422/RS-485 built-in isolated power circuit	RS-232/422/485	RS-232/RS-422/RS-485 built-in isolated power circuit	RS-232/422/485	RS-232/RS-422/RS-485 built-in isolated power circuit
N/A				
built-in				
natural air circulation				
CE / UL / KCC				
IP65 / NEMA4				
DC +24V (-10% to +15%) (has built-in isolated power circuit)	DC +24V (-10% to +15%) (please use isolated power supply)	DC +24V (-10% to +15%) (has built-in isolated power circuit)	DC +24V (-10% to +15%) (has built-in isolated power circuit)	
7.5W	5.2W	7.8W	12W	12W
3V lithium battery CR2032 x1				
±3 years				
0°C to 50°C				
-20°C to 60°C				
10 - 90% RH (0 to 40°C) / 10% to 55% RH (41 to 50°C) pollution degree 2				
IEC61131-2 compliant 5Hz≤f<9Hz = continuous: 1.75mm / occasional: 3.5mm 9Hz≤f≤150Hz = continuous: 0.5g/occasional: 1.0g X, Y, Z directions for 10 times				
215 x 161 x 50	227.1 x 174.1 x 61		272 x 200 x 61	
196.9 x 142.9	219.4 x 166.5		261.3 x 189.3	
970g	1228g		1520g	

DELTA ELECTRONICS, INC.

Human machine interface (HMI)

DOP series HMI (human machine interface) touch screens

Delta DOP series Human Machine Interface provides various touch screens with multiple dimensions and colours and offers fast, convenient control functions for industrial automation machines. Moreover, programming the whole DOP series is done with Delta's Windows-based, user-friendly Screen Editor software. With this software, the user can quickly edit images and graphs and set suitable communication protocols through Macro commands.

DOP-AS35

DOP-B07S515

DOP-B07E415

new

DOP-B08E515

new

DOP-B10S615

type	display size	keys	colour	description	price

DOP-AS Series *(economic version) touch screen*

- 32-bit RISC micro controller
- 320 x 240 pixels
- 4 x user defined function keys, 1 x system key
- 2MB flash ROM - 128KB backup memory
- 3 sets COM ports RS-232/422/485 for multiple communication protocols

3.5"	320x240 pixel 2MB ROM			panel cutout: 118.8 x 92.8	
DOPAS35THTD	3.5" (70 x 53)	4/1	65536 colours	HMI touch panel	**3080.00**

DOP-B series *high-quality full-colour touch screens*

- full 65 536 colour high quality TFT display, enhanced resolution for more realistic images and colourful, vivid display
- RS-232/485/422, USB disk, Ethernet, audio output, SD card are supported for various applications
- high Flash and SDRAM memory
- multimedia stereo sound effect output (certain models)
- supports CF memory card - Ethernet (certain models)
- cost effective

4.7"	480x272 pixel 2MB ROM			panel cutout: 138 x 93.1	
DOP-B04S211	4.7" (103.7 x 58.8)	–	65536 colours	– HMI touch panel	**3050.00**
5.6"	320x234 pixel 8MB ROM			panel cutout: 172.4 x 132.4	
DOP-B05S101	5.6" (113.3 x 84.7)	–	65536 colours	– HMI touch panel	**3880.00**
7"	800 x 600 pixel 128MB ROM			panel cutout: *same as 5.6" (172.4 x 132.4)*	
DOP-B07S515	7" (141 x 106)	–	65536 colours	– HMI touch panel	**4950.00**
DOP-B07E515*	7" (141 x 106)	–	65536 colours	– HMI touch panel	**5950.00**
7"	800 x 400 pixel 128MB ROM			panel cutout: 196.9 x 142.9	
DOP-B07S415	7" (152.4 x 91.5)	–	65536 colours	wide-screen HMI touch panel	**5200.00**
DOP-B07E415*	7" (152.4 x 91.5)	–	65536 colours	wide-screen HMI touch panel	**6250.00**
8"	800 x 600 pixel 128MB ROM			panel cutout: 219.4 x 166.5	
DOP-B08S515	8" (162 x121.5)	–	65536 colours	– HMI touch panel	**7290.00**
DOP-B08E515*	8" (162 x121.5)	–	65536 colours	– HMI touch panel	**8330.00**
10.1"	1024 x 600 pixel 128MB ROM			panel cutout: 261.3 x 189.3	
DOP-B10S615	10.1" (226 x 129)	–	65536 colours	wide-screen HMI touch panel	**9380.00**
DOP-B10E615*	10.1" (226 x 129)	–	65536 colours	wide-screen HMI touch panel	**10420.00**

* *incorporates Ethernet communication and stereo output*

Accessories

DOP-CAUSBAB	PC to touch panel (via USB) communication cable	**105.00**
DOP-CA232DP	PLC to touch panel (via RS-232) communication cable (female)	**105.00**
DOPACAB2A30	PLC to touch panel (via RS-232) communication cable (male)	**105.00**

**DOP soft V1.00.06** editor/design software for all DOP series HMI's — **180.00**
new upgraded configuration software provides complete functions in a very user-friendly operator interface makes editing easier than ever with a whole new level of design facilities

eServer data collection software — **180.00**
permits transfer of production information and historic data directly from production site to a PC via Ethernet

eRemote remote control software — **180.00**
permits viewing and checking of the same screen on the HMI at production site to control the manufacturing process via Ethernet

Screen Editor
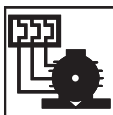
TP series operation interface panel (text panel)

text panel		TP02G-AS1	TP04G-AS2	TP04G-AL-C	TP04G-AL-2	TP04G-BL-C	TP08G-BT2
• dual COM port • built-in RTC • function keys • password facility							
display specifications	screen type	STN LCD					
	display color	monochrome					
	resolution	160 x 32	128 x 64	192 x 64			240 x 128
	backlight	life span of backlight ± 50.000 hours at 25°					
	display range	72 X 22mm	3" (67 x 32mm)	4.1" (101.8 x 35.24mm)			3.8" (83 x 41mm)
flash memory		256k byte		256k byte			1M byte
program download port		COM1 (RS-232)					
serial port	COM1	RS-232	RS-232/422	RS-232	RS-232/422	RS-232	RS-232/422
	COM2	RS-485	–	RS-485		–	RS-485
extension interface		slot for program copy card					
real-time clock		–	real-time clock built-in				
auxiliary keys	system keys	6	7	5		7	12
	function keys	10	5	5		10	12
operating voltage		DC +24V (-10% to +20%)					
backup battery		3V lithium battery CR2032 x 1 / battery life: 5 years					
buzzer		85db					
cooling method		natural air circulation					
operating temperature		0 to 50°C					
operating humidity		10 - 90% RH (0 to 40°C)					
vibration		IEC61131-2, IEC68-2-27 (TEST Fc) 5Hz≤f<8.4Hz continous: 3.5mm / 8.4Hz≤f≤150Hz contious: 1.0g					
shock		IEC61131-2, IEC68-2-27 (TEST Ea) 15g peak, 11ms duration,half-sine, three shocks in each direction per axis					
radiated emission		CISPR11, Class A Frequency: 30 to 230MHz, limits: 40dB uV/m / 230MHz to 1GHz, limits: 47dB uV/m					
electromagnetic field		EN61000-4-3, frequency: 80 to 200MHz, limits: 10V/m					
electrostatic discharge		EN61000-4-2, air discharge: 8KV, contact discharge: 4KV					
fast transient burst		EN61000-4-4, Poer line: 1KV, comunication I/O: 500V					
dimensions (H) x (W) x (H)		147 x 97 x 35.5mm		163.6 x 108.6 x 37mm			210 x 122 x 45mm
panel cutout		136 x 85		151 x 96		163 x 96	196 x 108

Delta Text Panels (TP) offer simple operation and control functions. TP series panels support various communication protocols, are cost-effective and afford high flexibility in use, to quickly control systems and effectively improve working efficiency.

TP series operation interface panel *(text panel)*

type	display size	keys	description	price
TP02G-AS1	(72 x 22)	16	2-line operation interface panel display	**1500.00**
TP04G-AS2	3" (67 x 32)	12	4-line operation interface panel display	**1840.00**
TP04G-AL2	4.1" (102 x 35)	10	4-line operation interface panel display	**1660.00**
TP08G-BT2	3.8" (83 x 41)	24	8-line operation interface panel display	**2015.00**

TP accessories

TP-PCC01			program-data backup/copy module	**760.00**
DVPACAB530			TP series to PC program upload/download cable (RS-232)	**140.00**
DVPACAB2A30			TP series to DVP (PLC) communication cable (RS-232)	**105.00**
TPEditor			(MS-Windows based) software for TP series operation interface panels	**180.00**

TP02G

TP04G

TP08G-AS2

DELTA ELECTRONICS, INC.
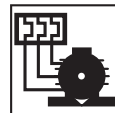
AC servo drives and motors

ASDA-A2 servo drives *"high precision" servo drive for total control*

- excellent performance (up to 1kHz frequency response)
- flexible position register control mode (PR mode)   • real-time capture and compare functions
- feature 20-bit superior resolution encoder (1.280.000 pulses/revolution)
- full closed-loop control (capable of reading second feedback)
- superlative vibration suppression for a wide variety of applications

type	rated output power	supply	description	price
ASDA20421M	400 W	220V single-phase	A2 (20-bit) servo drive	5250.00
ASDA20721M	750 W	220V single-phase	A2 (20-bit) servo drive	5630.00
ASDA21021M	1.0 kW	220V single-phase	A2 (20-bit) servo drive	5820.00
ASDA21521M	1.5 kW	220V single-phase	A2 (20-bit) servo drive	7350.00
ASDA22043M*	2.0 kW	400V three-phase	A2 (20-bit) servo drive	10950.00
ASDA23043M*	3.0 kW	400V three-phase	A2 (20-bit) servo drive	13200.00
ASDA24543M*	4.5 kW	400V three-phase	A2 (20-bit) servo drive	13520.00
ASDA25543M*	5.5 kW	400V three-phase	A2 (20-bit) servo drive	22650.00
ASDA27543M*	7.5 kW	400V three-phase	A2 (20-bit) servo drive	30450.00
* requires external regenerative braking resistor		400W 40 Ω 2-3kW BR400W040		630.00
		1000W 20 Ω 4.5-7.5kW BR1K0W020		1610.00

ECMA motors *for "A2" drives*

ECMAC10604ES	400 W	low inertia	A2 (20-bit) servo motor	3520.00
ECMAC10807ES	750 W	low inertia	A2 (20-bit) servo motor	3830.00
ECMAC11010ES	1.0 kW	low inertia	A2 (20-bit) servo motor	5670.00
ECMAE11315ES	1.5 kW	medium inertia	A2 (20-bit) servo motor	7170.00
ECMAK11320ES	2.0 kW	low/medium inertia	A2 (20-bit) servo motor	7540.00
ECMAL11830PS	3.0 kW	medium/high inertia	A2 (20-bit) servo motor	13820.00
ECMAL11845PS	4.5 kW	medium/high inertia	A2 (20-bit) servo motor	17740.00
ECMAL11855P3	5.5 kW	medium/high inertia	A2 (20-bit) servo motor	21690.00
ECMAL11875P3	7.5 kW	medium/high inertia	A2 (20-bit) servo motor	27360.00

Cables and accessories *for "A2" drives/motors*

ASDABPW0005	power cable U,V,W	for motor	400W - 750W	510.00
ASDCAPW1005	power cable U,V,W	for motor	1 kW - 1.5 kW	860.00
ASDCAPW1205	power cable U,V,W	for motor	2 kW	1560.00
ASDCAPW2205	power cable U,V,W	for motor	3 kW - 5.5 kW	1910.00
ASDCAPW3205	power cable U,V,W	for motor	7.5 kW	2560.00
ASDABEN0005	encoder cable	for motor	400W - 750W	890.00
ASDCAEN1005	encoder cable	for motor	1 kW - 7.5 kW	980.00
ASDCARS0003	RS-232 communication cable			145.00
DOPCAUSBAB	drive - computer communication cable			105.00
ASDCNUS0A08	USB-RS-232 communication module			560.00
ASDCNSC0050	I/O signal connector (50pin)			170.00
ASDBM50A	terminal block for manual wiring (including cable)			2290.00
ASD-IF-SC5020	convenient connector for A2 drives			660.00

ASDA-B2 servo drives *"standard" servo drive for general purpose applications*

- excellent performance (up to 550Hz frequency response) <1ms settling time
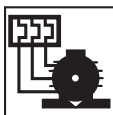- features 17-bit superior resolution encoder (160.000 pulses/revolution)

ASDB20221B	200 W	220V single-phase	B2 (17-bit) servo drive	4330.00
ASDB20421B	400 W	220V single-phase	B2 (17-bit) servo drive	4330.00
ASDB20721B	750 W	220V single-phase	B2 (17-bit) servo drive	4950.00
ASDB21021B	1.0 kW	220V single-phase	B2 (17-bit) servo drive	5000.00
ASDB21521B	1.5 kW	220V single-phase	B2 (17-bit) servo drive	6380.00

ECMA motors *for "B2" drives*

ECMAC20602ES	200 W	low inertia	B2 (17-bit) servo motor	3020.00
ECMAC20604ES	400 W	low inertia	B2 (17-bit) servo motor	3020.00
ECMAC20807ES	750 W	low inertia	B2 (17-bit) servo motor	3310.00
ECMAC21010ES	1.0 kW	low inertia	B2 (17-bit) servo motor	5150.00
ECMAE21315ES	1.5 kW	medium inertia	B2 (17-bit) servo motor	6650.00

Cables and accessories *for "B2" drives*

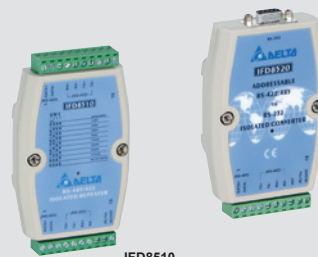|				
ASDBCAPW0205	power cable U,V,W	for motor	200 W - 750 W	330.00
ASDBCAPW1205	power cable U,V,W	for motor	1 kW - 1.5 kW	1560.00
ASDBCAEN0005	encoder cable	for motor	200 W - 750 W	330.00
ASDBCAEN1005	encoder cable	for motor	1 kW - 1.5 kW	990.00
ASDCARS0003	RS-232 communication cable			145.00
ASDCNUS0A08	USB-RS-232 communication module			560.00
ASDBCNDS0044	I/O signal connector (44pin D-SUB plug))			100.00
ASDCNIE0B06	tap joint for RS-485 communication, 2 x RJ-11 female connectors			86.00

ASD-A21521-U

ECMA-E11315ES

ASDB20421B

ECMA-C30604ES

Above prices do not include VAT. E&OE

Encoders

ES series incremental encoders

ROE series encoders, provide precise positioning and speed sensing functions. They convert rotary motion or position data to electronic pulses for speed and position detection.

common characteristics:
- signal output **N:** A, B & Z (Ungated)
- encoder diameter **5:** 50 mm diameter (other sizes available on request)
- shaft diameter **6:** 6 mm diameter (other sizes available on request)
- resolution **0C:** 360 ppr / **06:** 600 ppr / **11:** 1024 ppr (others available on request)

ES3...

ES5...

type	resolution (ppr)	input voltage	output form	description	price
• output form	**C:** open collector				
• input voltage	**9:** 7 - 24 Vdc				
ES502CN6942	200 ppr	7 - 24 Vdc	open collector	incremental encoder	**940.00**
ES50CCN6942	360 ppr	7 - 24 Vdc	open collector	incremental encoder	**940.00**
ES506CN6942	600 ppr	7 - 24 Vdc	open collector	incremental encoder	**1250.00**
ES511CN6942	1024 ppr	7 - 24 Vdc	open collector	incremental encoder	**1250.00**
• output form	**L:** line driver				
• input voltage	**8:** 5 - 12 Vdc				
ES50CLN6842	360 ppr	5 - 12 Vdc	line driver	incremental encoder	**1060.00**
ES506LN6842	600 ppr	5 - 12 Vdc	line driver	incremental encoder	**1370.00**
ES511LN6842	1024 ppr	5 - 12 Vdc	line driver	incremental encoder	**1370.00**

Encoder accessories

3230305400	CPL-P150606 - plastic	encoder shaft adaptors	15 mm outer/6 mm shaft	**80.00**

IFD8500

Industrial communication modules

Used in industrial automation applications for converting communication signals automation, servo and control devices. IFD series communication modules are robust, high quality devices offering stable communication with in-built protection. Their excellent signal processing and isolation properties ensure correct, reliable data transmission.

| type	from	to	supports max.	description	price
IFD6500	USB	RS-485	75 - 115,200bps	converter with no power supply function	**790.00**
IFD6503	USB	CANopen / DeviceNet	1Mbps	converter	**3450.00**
IFD6530	USB	RS-485	75 - 115,200bps	converter with 9V power supply	**1330.00**
IFD8500	RS-232	RS-485/422	–	isolated converter	**860.00**
IFD8510		RS-485/422	–	isolated repeater/amplifier	**990.00**
IFD8520	RS-232	RS-485/422	–	isolated (addressable) converter	**1130.00**
IFD9502	RS-232/485	DeviceNet	500kbps	communication module	**2120.00**
IFD9503	RS-232/485	CANopen	1Mbps	communication module	**1670.00**
IFD9506	RS-232/485	MODBUS TCP/IP	–	communication module	**2580.00**
IFD9507	RS-232/485	Ethernet TCP/IP	–	communication module	**2580.00**

IFD8510

IFD8520

IFD9503

IFD9507

DPA compact miniature pressure/vacuum sensors (H) 30 x (W) 30 x (D) 26 mm

- 2 x digital outputs (NPN or PNP) and 1 x analogue output (1-5V or 4-20mA)
- various unit conversion functions (kPa, kgf/cm2, bar, mmHg, psi, inchHg)
- selectable LED (3 colours) set different colour for different parameter
- 10 sets of output response times available
- connection: 1/8PT inner pore M5
- safety control function (to prevent unwanted parameter changes)

type	pressure range (kPa)	output type	description	price
DPA01MP	-100-100 kpa	NPN + 1-5 Vdc	DPA mini pressure sensor	**830.00**
DPA01QP	-100-100 kpa	PNP + 1-5 Vdc	DPA mini pressure sensor	**830.00**
DPA10MP	-100-1000 kpa	NPN + 1-5 Vdc	DPA mini pressure sensor	**830.00**
DPA01NP	-100-100 kpa	NPN + 4-20mA	DPA mini pressure sensor	**830.00**
DPA10NP	-100-1000 kpa	NPN + 4-20mA	DPA mini pressure sensor	**830.00**

Accessories for pressure sensors

DPAPFKit	panel mount accessory	(31 x 31 mm cutout)	**86.00**
DPAFMKit	surface mount support bracket	(all sides mounting)	**99.00**
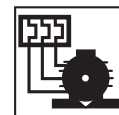
DPA

Above prices do not include VAT. E&OE

Temperature controllers

Temperature controllers

- universal sensor inputs: thermocouple: type (K-J-T-E-N-R-S-B-L-U-TxxK)
  platinum RTD: pt100, JPt100
  analogue: 0-5V, 0-10V, 0-20mA, 4-20mA, 0-50mV (Not DTA)
- outputs: relay: 5A 250Vac - voltage pulse: 14Vdc - current: DC 4-20mA - linear voltage: 0-10V

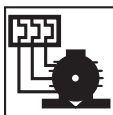| type	panel size(mm) (W) x (H)	description	output 1	output 2	price
DTD "economical" series temperature controller *100-240 Vac 50/60 Hz* IP65					
• PID, programmable PID, ON/OFF, Manual control modes • one alarm output with eight alarm modes					
DTD4848RO	48 x 48	econo temperature controller	–	relay	**580.00**
DTD4848VO	48 x 48	econo temperature controller	–	14Vdc	**580.00**
DTD4896RO	48 x 96	econo temperature controller	–	relay	**630.00**
DTA "standard" series temperature controller *100-240 Vac 50/60 Hz* IP65					
• PID, ON/OFF, manual control • PID parameter Auto-Tuning					
DTA4848R0	48 x 48	standard temperature controller	–	relay	**700.00**
DTA4848V0	48 x 48	standard temperature controller	–	14Vdc	**700.00**
DTA4848C0	48 x 48	standard temperature controller	–	4-20mA	**700.00**
DTA4896RO	48 x 96	standard temperature controller	–	relay	**760.00**
DTA9648RO	96 x 48	standard temperature controller	–	relay	**760.00**
DTA7272RO	72 x 72	standard temperature controller	–	relay	**760.00**
DTA9696RO	96 x 96	standard temperature controller	–	relay	**850.00**
DTB "advanced" series temperature controller *100-240 Vac 50/60 Hz* IP65					
• two groups of outputs to auto-tune; two groups of PID parameters • sampling rate: thermocouple 0.15 sec, platinum RTD 0.4 seconds • available output combinations: relay, voltage pulse, current, linear voltage • three groups of alarm outputs • built-in dual loop output control for heating and cooling • built-in RS-485 communication interface (MODBUS ASCII/RTU)					
DTB4824RR	48 x 24	advanced temperature controller	relay	relay	**800.00**
DTB4848RR	48 x 48	advanced temperature controller	relay	relay	**970.00**
DTB4848VR	48 x 48	advanced temperature controller	14 Vdc	relay	**970.00**
DTB4848CR	48 x 48	advanced temperature controller	4-20 mA	relay	**970.00**
DTB4848LR	48 x 48	advanced temperature controller	0-5V, 0-10V	relay	**970.00**
DTB4896RR	48 x 96	advanced temperature controller	relay	relay	**1060.00**
DTB4896VR	48 x 96	advanced temperature controller	14 Vdc	relay	**1060.00**
DTB4896CR	48 x 96	advanced temperature controller	4-20 mA	relay	**1060.00**
DTB9696RR	96 x 96	advanced temperature controller	relay	relay	**1150.00**
DTB9696VR	96 x 96	advanced temperature controller	14 Vdc	relay	**1150.00**
DTB9696CR	96 x 96	advanced temperature controller	4-20 mA	relay	**1150.00**
DTB9696LR	96 x 96	advanced temperature controller	0-5V, 0-10V	relay	**1150.00**
DTB4848RRE✱	48 x 48	event input with 2 set points	relay	relay	**1000.00**
DTB4896RRE✱	48 x 96	event input with 2 set points	relay	relay	**1090.00**

✱ *Event function permits switching between 2 different temperature set points*
  any combination of above outputs available on request

DTC modular temperature controller *24 Vdc*   (thermocouples see page 224)

DTC features modular, wire-saving structure able to monitor many temperature points by parallel modular extensions. User configurable outputs according to actual requirements.

- PID, programmable PID, ON/OFF, manual control
- PID control function permits set-up of up to 64 sets of temperature and control times
- adopts dual-loop output control (able to execute heating and cooling simultaneously)
- analogue inputs: 0-5V, 0-10V, 0-20mA, 4-20mA, 0-50mV
- built-in RS-485 communication interface (MODBUS ASCII/RTU (2.400 - 38.400bps)

type	panel size(mm)	description	output 1	output 2	price
DTC1000R	25.2 x 90	main unit temp controller	relay	relay	**670.00**
DTC1000C	25.2 x 90	main unit temp controller	4-20mA	relay	**670.00**
DTC2000R	25.2 x 90	extension unit temp controller	relay	relay	**670.00**
DTC2000C	25.2 x 90	extension unit temp controller	4-20mA	relay	**670.00**

DTD 4848R0

DTA 4848R0

DTA 4896R0

DTA 7272R0

DTB 4824RR

DTC 1000

DTC 2000

Above prices do not include VAT. E&OE

Power supplies

DRP024V060W1

Power supplies

Delta power supplies offer a nominal output voltage of 24 Vdc with a wide temperature range - 20ºC to + 75ºC and a minimum of 20ms hold-up time. The state-of-the-art design is manufactured to withstand harsh industrial environments. The rugged ultra-compact housing is shock and vibration resistant to IEC60068-2, and provides overvoltage overload and thermal protection.

Certification: UL508, EN60950, cULus 60950, EN50178, EN60204, GS, CCS Aus

Features:
• ease of wiring and handling
• wide input voltage range 85 to 264 Vac (1 phase) - 320 to 575 Vac (3 phase)
• overload, overvoltage and thermal protection
• power boost 150% for 3 seconds
• expected lifetime: 10 years
• RoHS compliant

DIN-rail mounting

DRP024V240W3AA

type	input voltage	output voltage	rated load (W)	(A)	housing	dimensions (mm) (H)	(W)	(D)	price
Single-phase 85 - 264 Vac supply									
DVPPS01	100 -240 Vac	24 Vdc	25	1	plastic	92	37	76	**315.00**
DVPPS02	100 -240 Vac	24 Vdc	50	2	plastic	92	55	76	**405.00**
DRP024V060W1AZ	85-264 Vac	24 Vdc (adj)	60	2.5	plastic	121	32	113	**400.00**
DRP024V120W1AA	85-264 Vac	24 Vdc (adj)	120	5	aluminium	121	50	115	**870.00**
DRP024V240W1AA	85-264 Vac	24 Vdc (adj)	240	10	aluminium	121	85	119	**1520.00**
DRP024V480W1AA	85-264 Vac	24 Vdc (adj)	480	20	aluminium	121	160	119	**2050.00**
DRP012V030W1AZ	85-264 Vac	12 Vdc (adj)	30	2.5	plastic	121	32	113	**330.00**
DRP012V060W1AA	85-264 Vac	12 Vdc (adj)	60	5	aluminium	121	32	113	**610.00**
DRP012V100W1AA	85-264 Vac	12 Vdc (adj)	100	8.33	aluminium	121	32	113	**850.00**
Three-phase 320 - 575 Vac supply									
DRP024V060W3AA	320-575 Vac	24 Vdc (adj)	60	2.5	aluminium	121	70	119	**960.00**
DRP024V120W3AA	320-575 Vac	24 Vdc (adj)	120	5	aluminium	121	70	119	**1100.00**
DRP024V240W3AA	320-575 Vac	24 Vdc (adj)	240	10	aluminium	121	85	121	**1720.00**
DRP024V480W3AA	320-575 Vac	24 Vdc (adj)	480	20	aluminium	121	160	119	**2500.00**

Panel mounting (chassis type) enclosed power supplies (single phase)

PMC-12V035W1AA

type	input voltage	output voltage	rated load (W)	(A)	housing	dimensions (mm) (H)	(W)	(D)	price
Single-phase 85 - 264 Vac supply									
PMC24V050W1AA	85-264 Vac	24 Vdc (adj)	50	2.1	aluminium	38	97	128	**270.00**
PMC24V100W1AA	85-264 Vac	24 Vdc (adj)	100	4.17	aluminium	38	97	158	**360.00**
PMC24V150W1AA	85-264 Vac	24 Vdc (adj)	150	6.25	aluminium	38	97	178	**460.00**
PMC24V300W1BA	85-264 Vac	24 Vdc (adj)	300	12.5	aluminium	38	97	178	**1300.00**
PMC12V035W1AA	85-264 Vac	12 Vdc (adj)	36	3	aluminium	38	97	98	**250.00**
PMC12V050W1AA	85-264 Vac	12 Vdc (adj)	50	4.17	aluminium	38	97	128	**270.00**
PMC12V100W1AA	85-264 Vac	12 Vdc (adj)	100	8.33	aluminium	38	97	158	**380.00**

CTA timer / counter / tachometer (in one unit)

PMC-12V050W1AA

CTA 3-in-1 timer/counter/tachometer is able to receive external input signals and calculate the times of events, frequency and speed. The CTA unit can be applied to batch counting, total counting, length measurement, position control, accurate timing, rotating speed etc.

• panel size : 48 x 48mm
• power input : 100-240 Vac, 50/60 Hz <10 VA (available with 24 Vdc supply)
• power supply : 12 Vdc ± 10%; 100 mA (integrated)
• display : 6 digit LCD, 2 line - SV (set value): green - PV (current value): red LED
• input : PNP voltage or NPN non-voltage
• output : relay 1: SPST 5A/250 Vac - relay 2: SPDT 5 A/250 Vac / transistor (model dependant)
• easy DIP switch setup

Timer	- timing up or down - 0.01 sec - 999.999 hours on-delay, interval, repeat (power on, pulse on, pulse off)
Counter	- counting up or down 1 or 2 stage, batch-total-dual counting (speed selection 1/30/200/3k/5k/10k Cps)
Tachometer	- measurement in Hz (can be configured to read RPM)

CTA4100A

type	supply		description	price
CTA4100A	100-240 Vac	3 in 1	multi-function-timer-counter-tachometer	**780.00**
CTA4101D	24 Vdc	3 in 1	as above with RS485	**860.00**
CTA4001A	100-240 Vac	3 in 1	as above with RS485 + NPN out	**830.00**

Above prices do not include VAT. E&OE